

REMARKS

Claims 1-17 remain in this application. No claims have been cancelled, added, or amended. The Applicants respectfully request reconsideration of this application in view of the following remarks.

I. 35 U.S.C. §103(a) Rejection – Applicants Admitted Prior Art in view of Klebanoff and Miyaji

The Examiner has rejected claims 1-17 under 35 U.S.C. §103(a) as being unpatentable over Applicant's Admitted Prior Art as shown in Application Fig.1 (hereinafter referred to as "AAPA"), in view of U.S. Patent No. 6,153,044 issued to Klebanoff et al. (hereinafter "Klebanoff"), and further in view of U.S. Patent No. 5,559,584 issued to Miyaji et al. ("Miyaji"). In particular, the Examiner has stated that *"it would have been obvious to a skilled artisan to employ a "vent" as taught by Klebanoff to the enclosure of AAPA and to add the inert gas to the enclosure and remove the air from the enclosure as suggested by Miyaji for the purpose of keeping the mask from being contaminated and increasing the transmittance of light and whereby improving the quality of the images to be printed"*. The Applicants respectfully submit that the present claims are allowable over any combination of AAPA, Klebanoff, and Miyaji for at least the reasons that: (a) the references should not be combined; and (b) even if combined the references do not teach or suggest all claim limitations.

(A) References Should Not Be Combined

Firstly, the references should not be combined. There is no suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, that Klebanoff be combined with AAPA, or be combined with AAPA in the manner suggested. Obviousness can only be established by combining

or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so, found either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Still further, Klebanoff seems to teach or motivate away from any combination with AAPA. From the very start, as evidenced in the background, Klebanoff discusses his thermophoretic pellicle as a mutually exclusive alternative to a conventional protective membrane pellicle such as that of AAPA. Klebanoff basically discusses that a customary protective membrane pellicle is intolerable for, and cannot be used in, most advanced lithographies (column 1, lines 55-63). Applicants submit that such discussion would motivate a practitioner away from combining the teachings of Klebanoff with AAPA.

Particularly, Klebanoff seems to teach or motivate away from using the gas inlet means and aperture with AAPA. Klebanoff discusses that a membrane pellicle cannot withstand large forces or changes in pressure (column 2, lines 6-13). However, as discussed in Klebanoff the “*present invention further provides protection from particle deposition onto a surface by employing a gas flow regime that directs particles away from the protected surface*” (column 3, lines 33-36). The flow is during the lithographic exposure. Applicants submit that such cautioning in Klebanoff against exerting forces or changing pressures on a pellicle membrane, such as would be encountered during flow, would motivate practitioners not to employ the gas inlet means and aperture of Klebanoff with a flexible membrane system of AAPA.

Another way in which Klebanoff seems to teach or motivate away from using the gas inlet means and aperture with AAPA is that Klebanoff teaches that “*the locations of*

the gas inlets and apertures, relative to the position of reticle 120, are chosen such as to cause gas flow 127 to be substantially parallel to and away from surface 125 (emphasis added), thereby eliminating inertial deposition of particles onto the surface 125 of reticle 120" (column 5, lines 56-60). There is no flow away from the surface in the Examiners proposed use of the gas inlet and aperture of Klebanoff in AAPA. Applicants submit that the cautioning to avoid inertial deposition of particles on the surface would motivate practitioners not to employ the gas inlet means an aperture of Klebanoff with the AAPA, since the surface to be protected is facing upward instead of downward, and since the flow is not directed away from the surface.

For these and other reasons, Applicants respectfully submit that combining Klebanoff with AAPA, and then modifying the combination, is clearly based on improper hindsight reasoning, with the Applicants own disclosure serving as a guide or roadmap.

(B) Even If Combined References Do Not Teach Or Suggest All Claim Limitations

Claim 1 recites an apparatus comprising at least "*a wall to connect the mask protective device with the patterned mask, the mask protective device, the patterned mask, and the wall defining a gas-filled enclosure; and a vent defined by the wall to add a first gas to the enclosure and to remove a second gas from the enclosure*". Even if combined, which does not seem appropriate, any combination of AAPA, Klebanoff, and Miyaji does not teach or suggest a vent defined by a wall connecting a mask protective device with a patterned mask.

Klebanoff's gas inlet means 130 and aperture 135 are formed in the pellicle walls 110. In contrast, claim 1 particularly recites that the vent is defined by the wall to connect the mask protective device with the patterned mask. Accordingly, any

combination of AAPA, Klebanoff, and Miyaji does not teach or suggest **a vent defined by a wall connecting a mask protective device with a patterned mask.**

To establish a prima facie case of obviousness, three basic criteria must be met. First, there **must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings** (emphasis added). Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) **must teach or suggest all the claim limitations** (emphasis added). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

For at least these reasons, **claim 1** is believed to be allowable. **Claims 2-14** depend upon claim 1 and are believed to be allowable therefor as well as for the recitations independently set forth therein.

Claim 15 is believed to be allowable for similar reasons. **Claims 16-17** depend upon claim 15 and are believed to be allowable therefor as well as for the recitations independently set forth therein.

II. 35 U.S.C. §103(a) Rejection - Sego In View Miyaji

The Examiner has rejected claims 1-17 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,422,704 issued to Sego (hereinafter referred to as "Sego") in view of U.S. Patent No. 5,559,584 issued to Miyaji et al. (hereinafter "Miyaji"). The Applicants respectfully submits that the present claims are allowable over any combination of Sego and Miyaji.

Claim 1 recites an apparatus comprising at least *“a vent defined by the wall to add a first gas to the enclosure and to remove a second gas from the enclosure, the first gas having a different gas phase composition than the second gas”*. Without admitting the appropriateness of the combination of Sego with Miyaji, the Applicants respectfully submit that any combination of Sego and Miyaji does not teach or suggest the claimed vent.

The pressure equalization conduits 261-264 of Sego do not constitute the claimed vent. The Examiner is respectfully directed to Figures 2-3 where it clearly shows that the pressure equalization conduits 261, 263 and the upper channel 271 taken together represent a single indirect air path entrance into the protected area 220. The Examiner has stated that air addition and removal can be done concurrently. Literally this is not true. As understood by Applicants assuming a higher external air pressure then air would flow into the upper channel 271 through the outer wall pressure equalization conduit 261, flow around the upper channel 271 to the opposite side, and then flow through the inner wall pressure equalization conduit 263 into the protected area 220. There is no convective cross flow.

Replacing the gas inside the system would seem to require very slow diffusive mass transfer along the indirect air path through the upper channel 271, which would take an exorbitant amount of time. The pressure equalization system of Sego is inherently designed to reduce flow of particles into the protected area 220 and is essentially designed to make it difficult to change the gas concentration in the protected area as proposed by the Examiner. Accordingly, the applicants contend that the pressure equalization conduits 261-264 do not constitute a vent to add a first gas to the enclosure and to remove a second gas from the enclosure, the first gas having a different gas phase composition than the second gas and cannot reasonably be used to replace the gas/air inside Sego's enclosure with the inert gas as allegedly suggested by Miyaji.

Accordingly, for at least these reasons **claim 1** is believed to be allowable. **Claims 2-14** depend upon claim 1 and are believed to be allowable therefor as well as for the recitations independently set forth therein.

Claim 15 is believed to be allowable for similar reasons. **Claims 16-17** depend upon claim 15 and are believed to be allowable therefor as well as for the recitations independently set forth therein.

Conclusion

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance. Applicants respectfully request that the rejections be withdrawn and the claims be allowed at the earliest possible date.

Request For Telephone Interview

The Examiner is invited to call Brent E. Vecchia at (303) 740-1980 if there remains any issue with allowance of the case.

Request For An Extension Of Time

The Applicant(s) respectfully petitions for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17 for such an extension.

Charge Our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,
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Date: July 23, 2003

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